CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-139

SITE CLEANUP REQUIREMENTS FOR:

LIVERMORE ARCADE SHOPPING CENTER;
GRUBB AND ELLIS REALTY INCOME TRUST, LIQUIDATING TRUST; STARK INVESTMENT COMPANY; CATELLUS DEVELOPMENT CORPORATION; STEVEN SONG dba MIKE'S ONE HOUR CLEANERS; MICHAEL NEELY AND PERRY NEELY dba MIKE'S ONE HOUR CLEANERS;

MILLER'S OUTPOST SHOPPING CENTER;
MILLER'S OUTPOST SHOPPING CENTER ASSOCIATES, IMA FINANCIAL CORPORATION; KATHLEEN McCORDUCK, JOHN McCORDUCK, PAMELA McCORDUCK & SANDRA McCORDUCK MARONA; STARK INVESTMENT COMPANY; FORTNEY H. STARK, JR.; CHARLES HARTZ dba PAUL'S SPARKLE CLEANERS;

LIVERMORE, ALAMEDA COUNTY.

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. The Livermore Arcade Shopping Center (LASC) is currently owned by Grubb and Ellis Realty Income Trust, Liquidating Trust ("Grubb & Ellis"). Past owners of LASC include Stark Investment Company and Catellus Development Corporation. Grubb & Ellis purchased the LASC property in January 1989. The property was owned by Stark Investment Company from December 1982 through January 1989 and by Catellus Development Corporation during and until December 1982. Mike's One Hour Cleaners ("Mike's Cleaners") is a dry cleaning facility at the LASC, and has been under the operation of Steven Song since December 1986. The previous operators of Mike's Cleaners, during the period February 1982 to December 1986, are Michael Neely and Perry Neely (The Neelys).

   The Miller's Outpost Shopping Center Associates, a limited partnership of which IMA Financial Corporation is the managing general partner, currently own a portion of the Millers Outpost Shopping Center (hereinafter called MOSC) and purchased the property in 1988. Past owners of MOSC include Kathleen McCorduck, John McCorduck, Pamela McCorduck, Sandra McCorduck Marona (The McCorducks), Stark Investment Company, and Fortney H. Stark. The property was owned by the McCorducks from 1983 through 1988, by Stark Investment Company from 1981 through 1983 and by Fortney H. Stark until 1981. Paul's Sparkle Cleaners (Paul's Cleaners) is a dry cleaning facility at the MOSC, and has been under the operation of Charles Hartz since 1976.

For the purposes of this Order, the general area encompassing both the LASC property and the MOSC property shall be hereinafter referred to as the "site" (Figure 1), and the aforementioned parties are hereinafter called the Dischargers.

2. Multimatic Corporation manufactured the dry cleaning machine ("Multimatic machine") that was installed at Mike's Cleaners in 1982, and the machine was sold to Mike's Cleaners by Western State Design. Hoyt Manufacturing was the supplier of "reclaimer" units at both Mike's Cleaners and Paul's Cleaners. Grubb and Ellis Realty Advisors, Inc.(GERA) was the LASC property manager for a brief period in 1988. At this time, insufficient evidence exists for the Board to name Multimatic Corporation, Western State Design, Hoyt Manufacturing, and GERA as Dischargers.

3. The LASC is located at the northwest corner of First and P streets, Livermore, California. Eight retail stores and two restaurants occupy the tenant spaces and the property covers an approximate area of 11.75 acres. The MOSC is located at the northwest corner of Railroad avenue and P street, Livermore, California. The property is occupied by a single story building with parking spaces and covers an approximate area of 5.0 acres.

4. The site is on the Mocho groundwater sub-basin, which is a natural recharge area for the Livermore groundwater basin. The geology underlying the site consists of Holocene alluvial deposits cut by channels of the ancestral Arroyo Mocho, which are filled with fluvial deposits. The sediments encountered were described on lithologic logs as predominantly unsorted gravel with clayey fine sand or silty clay matrix, occasionally interrupted with sandy clay lenses. The saturated zone consists of wet gravel lenses within clayey fine sand matrix, groundwater flowing primarily through the thin, clean gravel zones.

5. Two water bearing zones were encountered at the site, a shallow water bearing zone, followed by a deeper aquifer which is located at depths between 120 and 400 feet beneath the site. The saturated thickness of the shallow aquifer decreased from thirty feet to almost ten feet during the extensive drought from 1986 to 1992. The two water bearing zones are believed to be separated by a clay rich aquitard which restricts any hydraulic connection between them. The deeper aquifer is the principal source of groundwater for the City of Livermore in the area of the site.

6. Portions of the soil and the upper (shallow) aquifer at the site are contaminated with tetrachloroethene (PCE) and other chlorinated solvents such as cis-1,2-dichloroethene, trichloroethene and associated degradation products.

Additionally, gasoline components were also found in the shallow groundwater.

7. The Alameda County Department of Environmental Health (ACDEH) is the lead oversight agency for the investigation and cleanup of the gasoline contamination on site. The gasoline contamination, determined to be from off-site sources, is beyond the scope of this Order, and the Dischargers are not responsible for its cleanup.

8. The known potential sources of soil and groundwater Volatile Organic Chemical (VOC) contamination at the site are as follows:

    a. A significant release of PCE occurred at Mike's Cleaners, in 1982, which was then operated by the Neelys, soon after the Multimatic machine was installed. The first time the PCE storage facilities for the machine were filled, the machine spilled and/ or leaked 28 to 195 gallons of PCE to the floor. PCE then entered the subsurface environment by one or more pathways including direct transmission of liquid and/ or vapor phase PCE to the floor drain and sewer lateral line, transmission through the concrete floor by liquid phase passage via fissures or microfractures, transmission through the concrete floor by liquid and/ or vapor phase absorption, and/ or other pathways for transmission of this release and discharge of PCE. The sewer lateral line may have been disjointed causing direct PCE leaks, and is also known to be porous to PCE even when intact. Additional releases were made when spent PCE in still sludge was intentionally disposed of by discharge into the floor drain and sewer lateral line. Finally, cooling and separator water that may have contained small amounts of PCE was discharged to the floor drain until the machine was removed in March 1993.

    b. Paul's Cleaners, located about 450 feet northwest, and downgradient of Mike's Cleaners, is a generator of PCE solvent waste. There have been instances of PCE spills, and disposal of filtered PCE waste to the sewer at Paul's Cleaners. Discovery, related to several law suits, concerning Mr. Hartz's PCE handling and disposal practices is under way. High concentrations of PCE were detected in vapors obtained from a groundwater monitoring well located adjacent to Paul's Cleaners. Additional studies are required by this Order.

9. For the purposes of this Order, Mr. Steven Song, The Neelys and Mr. Charles Hartz are primarily responsible for the PCE discharges, as a result of their operations at Mike's Cleaners and Paul's Cleaners respectively. Stark Investment Company and Catellus Development Corporation, as past owners of LASC are secondarily responsible for the PCE discharges, for the purposes of this Order. The McCorducks, Stark Investment Company and Fortney H. Stark, as past owners of MOSC, are secondarily responsible for the PCE discharges, for the purposes of this Order. Grubb & Ellis and the Miller's Outpost Shopping Center Associates, as the current owners of LASC and MOSC respectively, are secondarily responsible for the PCE discharges, for the purposes of this Order. If the primarily responsible parties fail to comply with any provisions of this Order, within 60 days of the Executive Officer's determination and actual notice, the secondarily responsible parties shall comply with the provisions of the Order.

10. Based on the Remedial Investigation report, dated April 1992, submitted to the Board by Grubb & Ellis, the groundwater table at the site had declined to its lowest in twenty years, and a substantial amount of the PCE has been retained in the vadose zone soil. Soil contamination at the LASC property is limited to the area beneath the breach in the sewer pipe line, running between Mike's Cleaners and the main sewer line, and to areas where PCE in groundwater has impacted saturated sediments.

11. The Remedial Investigation further revealed that the PCE plume in the shallow groundwater at the site is 950 feet long and 400 feet wide. The plume is believed to be in dynamic equilibrium and is not migrating beyond the identified limits. Analysis of groundwater samples showed a maximum concentration of 5800 ppb in groundwater beneath Mike's cleaners. The deeper aquifer appears to be free of PCE contamination, based on sampling of nearby California Water Service (CWS) water supply wells. No sampling wells have been installed in the deeper aquifer.

12. A Baseline Health Risk Assessment (BHRA) report, dated April 1992, was submitted to the Board and the Department of Toxic Substances Control (DTSC), Region 2, by Grubb & Ellis. The BHRA, for the site, was performed using the health criteria published by the U. S. EPA either in the Integrated Risk Information System (IRIS) or in the Health Effects Assessment Summary Tables (HEAST). DTSC reviewed the report and sent their comments, dated June 30, 1993.

13. A pilot study Soil Vapor Extraction (SVE) was initiated at the site, by Grubb & Ellis, in June 1992 to evaluate its effectiveness at removing PCE from the vadose zone. Based on

the results from the pilot study, a Feasibility Study report dated July 1992, concluded that SVE with insitu air sparging is the most effective alternative to eliminate the PCE in soil and shallow groundwater. The Board hereby approves the continuance of the Pilot scale SVE system, as an interim remedial measure.

14. A Remedial Plan/ Preliminary Remedial Design report, dated March 1993, has been submitted to the Board by Grubb & Ellis. The report proposes to employ SVE with carbon treatment and, as appropriate, air sparging to remediate soil and groundwater at the site.

15. The site is contaminated with VOCs. Cleanup of the VOC contamination is necessary to protect public health and the environment. Grubb & Ellis has considered a reasonable range of alternative remedial measures to cleanup the contamination in soil and shallow groundwater. The selected remedy is cost effective and the Board approves the selected remedy.

16. A Cleanup goal proposed in the Remedial Plan/ Preliminary Remedial Design report, dated March 1993, states that the remedial system will be in operation until PCE concentrations in groundwater meet the 5 ppb Maximum Contaminant Level (MCL). The dischargers shall operate the remedial system to meet this goal. Should the dischargers get to the point of diminishing returns with the proposed remedial plan, they may petition the Board for alternative cleanup goals.

17. The Board's concurrence with the scope of the Remedial Plan/ Preliminary Remedial Design is contingent upon proof that the deeper aquifer is not contaminated by PCE or any of its degradation products. Investigations to determine the presence of any PCE and its extent in the deeper aquifer are under way and are required by this Order.

18. Based on the latest quarterly groundwater monitoring report, dated August 4, 1993, submitted by Grubb & Ellis to the Board, the shallow groundwater table elevation at the site has dramatically increased. Further, the PCE plume in the shallow groundwater shows high PCE concentrations in the vicinity of Paul's Cleaners, indicating the presence of possible PCE "hot spots" nearby.

19. A soil Remedial Investigation (RI) Work Plan, dated July 28, 1993, to investigate the presence of any PCE "hot spots" in soil at Paul's Cleaners, was submitted to the Board by the current operator of Paul's Cleaners (Charles Hartz). The Work Plan was submitted in response to two formal requests by the Board, pursuant to its authority under section 13267 (b) of the California Water Code. The Board approved the Work Plan, through a letter dated August 4, 1993, and sent a formal

request letter to the Dischargers associated with MOSC, dated August 11, 1993, requesting a technical report describing the results of the Soil RI, pursuant to its authority under Section 13267 (b) of the California Water Code. The report was due on October 1, 1993. Paul's Cleaners (Charles Hartz) indicated through a letter, dated September 17, 1993, that the report may be available by October 15, 1993. The Soil RI report is now required by this Order. Based on the results of the Soil RI and other site information, the Board may wish to remove parties associated with MOSC as Dischargers from the Order.

20. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 16, 1991. The Basin Plan contains water quality objectives for non-tidal waters including Arroyo Mocho, Arroyo Seco, Arroyo Las Positas, Arroyo de la Laguna, and their tributaries; and for Livermore-Amador Valley groundwaters.

21. The existing and potential beneficial uses of the groundwater underlying and adjacent to the property include:

    a. Municipal and domestic supply
    b. Industrial supply
    c. Industrial service supply
    d. Agricultural supply

22. The existing and potential beneficial uses of surface water in the Livermore-Amador Valley groundwater basin include:

    a. Contact and non-contact water recreation
    b. Wildlife habitat
    c. Groundwater recharge
    d. Fish migration and spawning

23. On October 28, 1968, the State Board adopted Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California". This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affect beneficial uses. The original release of wastes and continuing discharge to the groundwater beneath the site is in violation of this policy; therefore, the groundwater quality needs to be restored to its original quality to the extent reasonable.

24. On March 30, 1989, the Regional Water Quality Control Board incorporated the State Board policy of " Sources of Drinking Water" into this Region's Basin Plan. The policy provides for a Municipal and Domestic Supply Designation for all waters of the State with some exceptions. Two relevant exceptions are:

a. The total dissolved solids in the groundwater exceed 3000 mg/l, or
b. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

Neither of these exemptions apply to the Livermore-Amador Valley groundwater basin and its sub-basins. Therefore, the Livermore-Amador Valley groundwater basin and its sub-basins is considered a source of drinking water under the State Board Resolution 88-63.

25. The Dischargers have caused or permitted and threatened to cause or permit , waste to be discharged or deposited where it is or probably will be discharged to waters of the state and creates or threatens to create a condition of pollution or nuisance.

26. This action is an Order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

27. The Board has notified the Dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

28. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers shall cleanup and abate the effects described in the above Findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

4. The cleanup and containment of any polluted soil or groundwater by the Dischargers which will cause significant adverse spreading or migration of any pollution originating from other sites is prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. The Dischargers shall conduct further reporting, site investigation and monitoring activities as needed and as described in this Order. Results of such monitoring activities shall be submitted to the Board. Should monitoring results show evidence of plume migration, additional plume characterization may be required.

3. Any wells and/ or soil borings penetrating the aquitard between the shallow and deeper aquifers shall be constructed such that there is no potential for waste migration between them.

4. Any wells identified as potential conduits for the migration of wastes shall be properly abandoned, in compliance with applicable and appropriate guidance and regulations. A detailed Work Plan shall be submitted for review and approval by the Board, which describes the proposed methods of abandonment for each well identified.

5. Final cleanup standards for polluted groundwater shall be in accordance with State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California". Numerical standards shall not exceed the drinking water MCL (maximum contaminant level) or State AL (action level), whichever is more stringent, for each identified VOC. If an MCL or AL has not been established for a VOC, the standard shall be established based on the best available information. The Dischargers may, based upon site specific information, propose alternative numerical standards for consideration by the Board, as part of a final cleanup plan.

6. The cleanup standard for source-area soils in the unsaturated zone is 1 ppm (part per million) for total VOCs. If it is determined that remediation of soils in the saturated zone is necessary and appropriate, a cleanup standard for this remediation will be established by the Board. Soil cleanup standards may be modified by the Board if the Dischargers demonstrate with site specific data that higher concentrations of VOCs in the soil will not threaten the quality of waters of

the State or that cleanup to these standards are infeasible and human health and the environment are protected.

7. The Dischargers shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The Dischargers shall not be found in violation of this Order if documented factors beyond their control prevent the Dischargers from attaining this goal, provided the Dischargers made a good faith effort to attain this goal.

8. Pursuant to Section 13304 of the Water Code, the Dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. Upon receipt of a billing statement for such costs, the Dischargers shall reimburse the Board.

C. PROVISIONS

1. The Dischargers shall perform all further investigations and remedial work, preferably in a coordinated effort, in accordance with the requirements of this Order. All technical reports submitted in compliance with this Order shall be satisfactory to the Executive Officer, and, if necessary, the Dischargers may be required to submit additional information.

2. The Dischargers shall comply with all Prohibitions and Specifications of this Order, in accordance with the following time schedule and tasks:

    a. COMPLETION OF ADDITIONAL SITE CHARACTERIZATION WORK:

        Submit a technical report, acceptable to the Executive Officer, which describes the results of the Remedial Investigation conducted at the deeper aquifer to determine the extent of any contamination in this zone and also the gradient direction of the groundwater. The deep aquifer wells should intercept any contaminants in the down gradient direction, to serve as an "early warning system" to the nearby CWS water supply wells. In the event that the deeper aquifer is contaminated with PCE or any of its degradation products, a supplemental Feasibility Study should be included in the report.

        COMPLETION DATE: November 22, 1993.

b. EVALUATION AND CLOSURE OF POTENTIAL CONDUITS:

Submit a technical report, acceptable to the Executive officer, which contains the results of a potential conduit study. Any potential conduit should be included which would allow pollutants to migrate from the ground surface to the groundwater, and/ or between water bearing zones. These include, but or not limited to, existing monitoring wells, extraction wells, and sumps as well as historical drainage or water wells. The technical report should document the closing of any potential conduits identified thereof. The technical report should also include documentation of appropriate permits, types and quantities of materials used to seal each well, and/ or the method of well destruction, as well as a description/ location of the water bearing zones which were sealed.

COMPLETION DATE: November 22, 1993.

c. SUPPLEMENTAL FEASIBILITY STUDY/ AMENDED REMEDIAL DESIGN AS APPROPRIATE, BASED ON SOIL RI AT PAUL'S CLEANERS:

The Dischargers associated with MOSC shall submit a technical report, acceptable to the Executive Officer, which describes the results of the soil RI at Paul's Cleaners, as indicated in Finding 19. In the event that any VOC "hot spots" are discovered in the soil, an amended Remedial Design or a supplemental Feasibility Study should be submitted as appropriate.

COMPLETION DATE: November 22, 1993.

d. IMPLEMENTATION OF REMEDIAL ACTION:
Submit a technical report, acceptable to the Executive Officer, which documents the implementation of the necessary tasks identified in the final remedial plan.

COMPLETION DATE: December 10, 1993.

e. PROPOSED FINAL CLEANUP OBJECTIVES:

Submit a technical report, acceptable to the Executive Officer, which evaluates the installed remedial system and recommend measures necessary to achieve final cleanup objectives in groundwater, including a tasks and time schedule to implement

them.

COMPLETION DATE: November 15, 1994.

3. The dischargers may at their option, and at any time before the completion dates stated above, submit one or more reports demonstrating that site cleanup has been completed to the target cleanup levels, as approved by the Board, or to a point of minimal incremental returns. After reviewing such a report, the Board, as recommended by the Executive Officer, may modify, adjust or eliminate those provisions of this Order as may be found unnecessary to protect public health and safety and/ or the beneficial uses of the waters of the State, and/ or to comply with all applicable laws, regulations, policies and guidelines.

4. If the Dischargers are delayed, interrupted or Prevented from meeting one or more of the completion dates specified in this Order, the Dischargers shall promptly notify the Executive Officer. In the event of such delays, the Board may consider modification of the task completion dates established in this Order.

5. Technical reports on compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted quarterly beginning with the report for the third quarter (July through September) of calendar year 1993, due by November 15, 1993. Each of these shall report on the progress of the remedial action program during the period covered by the report, and shall include but not be limited to, updated water table/piezometer surface maps for all affected water-bearing zones, and appropriately scaled and detailed base maps showing the locations of all monitoring wells, extraction wells, and piezometers, and identifying adjacent facilities and structures. Each report shall include updated isoconcentration maps of VOCs in groundwater, including but not limited to PCE. The report shall also include tabulations of water-level and water-quality data, and interpretations and discussions of data obtained.

6. In addition to the reports required in Provision 5 the Dischargers shall submit an annual technical report beginning with the report for calendar year 1993, due by February 15, 1994. This report shall include, but need not be limited to, an evaluation of the progress of cleanup measures and the feasibility of meeting groundwater and soil cleanup standards established in this Order. If the Dischargers determine that it is not feasible to meet the cleanup standards established by this Order, the report shall also contain an evaluation of maximum cleanup standards that could be achieved. If the Dischargers determine that it is not feasible to meet soil cleanup standards, the report shall evaluate the potential for

chemicals in soils to threaten the quality of the waters of the State and shall evaluate whether public health and the environment are protected. Geological maps and/or cross-sections describing the hydrogeological setting of the site shall be provided in the report for each calendar year that the Order is in effect.

7. All hydrogeological plans, specifications, reports and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.

8. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

9. The Dischargers shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

10. Copies of all correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:

    a. California Environmental Protection Agency DTSC/ Region 2
    b. U. S. Environmental Protection Agency, Region IX
    c. Alameda County Department of Environmental Health (ACDEH)
    d. Zone 7, Alameda County Flood Control District

    The Executive Officer shall receive one complete copy of all correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of the Order, and may require additional copies to be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

11. The Dischargers shall permit the Board or its authorized representatives, in accordance with Section 13267 (c) of the California Water Code:

    a. Entry upon Dischargers premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept

under the terms and conditions of this Order.

c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

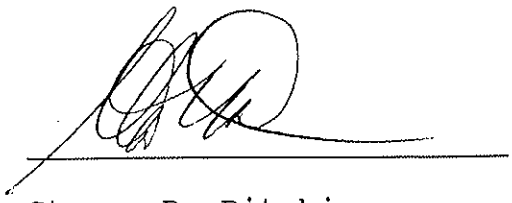
d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

12. The Dischargers shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.

13. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the Dischargers shall report such discharge to this Board, at (510) 286-1255 on weekdays during office hours from 8 A.M. to 5 P.M., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons, notified.

14. The Board will review this Order periodically and may revise the requirements when necessary.

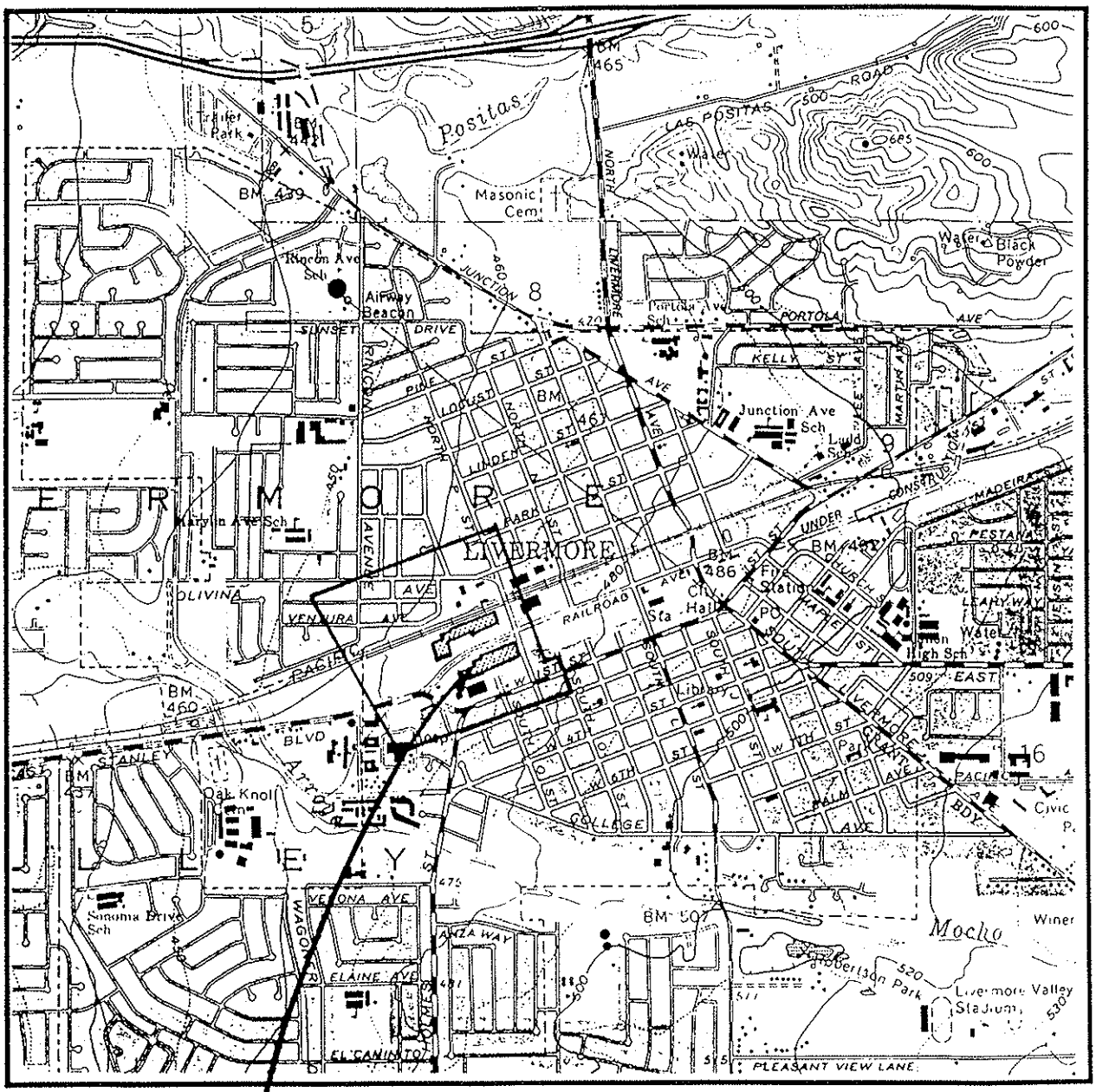
I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 20, 1993 .



Steven R. Ritchie,
Executive Officer.

Attachments: Site Map

Figure 1 Site Map



Source: USGS Livermore Quadrangle, Alameda County, 1961, Photorevised 1980.